SOLARIS LED™

Mozart™

USER MANUAL

PRELIMINARY

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1. Introduction

PRODUCT OVERVIEW

The Solaris LED Mozart is an extremely versatile and creative pixel-mapping and decorative lighting tool that can be placed almost anywhere. Blazing fast (38,400Hz), with Cree™ LEDs, Mozarts are ideal for high-speed photography and video. Modes include 1, 4, or 16 pixels (3 to 48 DMX channels) per fixture.

The 10-way power supply in a rugged ProPlex Mini enclosure is designed for portable use or truss-mounting with yoke included. Coming soon is the 40-way 2U RackMount power supply which supports DMX, RDM, ArtNet, and sACN protocols. It features a large front-panel touchscreen, and a dedicated PC configuration utility.

- Great for low weight load-bearing structures and surfaces.
- Approx. 11,000 NITS! Brighter than nearly all outdoor LED walls!
- Rain and dust resistant IP65 enclosure – use in all environments!
- Ultra-high refresh rate – 38,400Hz! Great for high-speed photography and videography.
- Single cable, simple power-data connections, daisy-chain or split – location flexibility.
- Extremely compact and lightweight – 4.7 x 43.7 inches. Only 1 ¼ lb.
- Easy remote addressing and mode switching via RDM

UNPACKING INSTRUCTIONS

Upon receipt of the fixture, carefully unpack the carton and check the contents to ensure that all parts are present and in good condition. Notify the shipper immediately and retain packing material for inspection if any parts appear to be damaged from shipping or if the carton itself shows signs of mishandling. Save the carton and all packing materials. In the event that a fixture must be returned to the factory, it is important that the fixture be returned in the original factory box and packing.

POWER REQUIREMENTS

Before powering the unit, make sure the line voltage is within the range of accepted voltages. This fixture accommodates 100-240VAC, 50/60Hz. All fixtures must be powered directly from a switched circuit and cannot be operated with a rheostat (variable resistor) or dimmer circuit, even if the rheostat or dimmer channel is used solely for a 0-100% switch.

When powered up, Solaris LED performs a preprogrammed internal test. On initial power-up the factory default DMX address appears on the display screen and Solaris LED is ready for operation. After initial power-up, the last-saved DMX address will appear.

SAFETY INSTRUCTIONS

Please read these instructions carefully. This user guide contains important information about the installation, usage and maintenance of this product.

- Please keep this User Guide for future reference. If unit is sold to another user, make sure they also receive this instruction booklet.

- Ensure fixture is connected to proper voltage, and that line voltage is not higher than that stated on the fixture.
- Make sure there are no flammable materials close to the unit while operating.
- Always disconnect from the power source before servicing or fuse replacement. Always use the fuse specified in this manual..
- Always use a safety cable when hanging fixture overhead.
- Maximum ambient temperature (Ta) is 40°C (104°F). Do not operate fixture at temperatures above this rating.
- In the event of a serious operating problem, stop using the unit immediately. Repairs must be carried out by trained, authroized personnel. Conact the nearest authorized technical assistance center. Only OEM spare parts should be used.
- Do not connect the device to a dimmer pack.
- Make sure power cord is never crimped or damaged.
- Never disconnect power cord by pulling or tugging on the cord.
- Avoid direct eye exposure to the light source during operation.

Caution! There are no user serviceable parts inside the unit. Do not open the housing or attempt any repairs yourself. In the unlikely event your unit may require service, please contact your distributor.

Disconnect the power cord before replacing a fuse and always replace with the same type fuse.

FUSE REPLACEMENT

The Mozart 10-way PSU uses a 6A, 250V, slow-blow, 5x20mm (0.2x0.8 in.) fuse. Mozart fixtures have no fuse. To replace fuse:

1. With a screwdriver turn the fuse cap counter-clockwise to remove fuse cap with fuse.
2. Replace fuse attached to fuse cap.
3. Reinsert fuse cap with new fuse and tighten clockwise.

MOUNTING/RIGGING – MZ10 PSU 10-WAY, MINI ENCLOSURE

Orientation

The Mozart MZ10 PSU 10-way may be mounted on truss or pipe, in any position, using the yoke supplied with the unit. Always make sure there is adequate room for ventilation.

Rigging – *Always consult a certified rigging engineer before suspending any fixture overhead!*

Use ProBurger® couplers or equivalent C- or O-type clamps for attaching to truss. After establishing the desired position, retighten both knobs.

- *Always use safety cables!*
- When selecting installation location, consider routine maintenance.
- Never mount Mini enclosure where it will be exposed to moisture, high humidity, extreme temperatures, or restricted ventilation.

2. Setup

A DMX data link is needed to run light shows of one or more fixtures using a DMX-512 lighting console. The combined number of channels required by all of the fixtures on the DMX data link will determine the number of fixtures the DMX data link can support.

Important: Fixtures on a DMX data link must be daisy-chained in one single line. To comply with the EIA-485 standard, no more than 32 devices should be connected on one data link. Connecting more than 32 fixtures on one serial data link without the use of a DMX optically isolated splitter may result in deterioration of the digital DMX signal.

Maximum recommended DMX data link distance between fixtures: 300 meters (984 ft.)

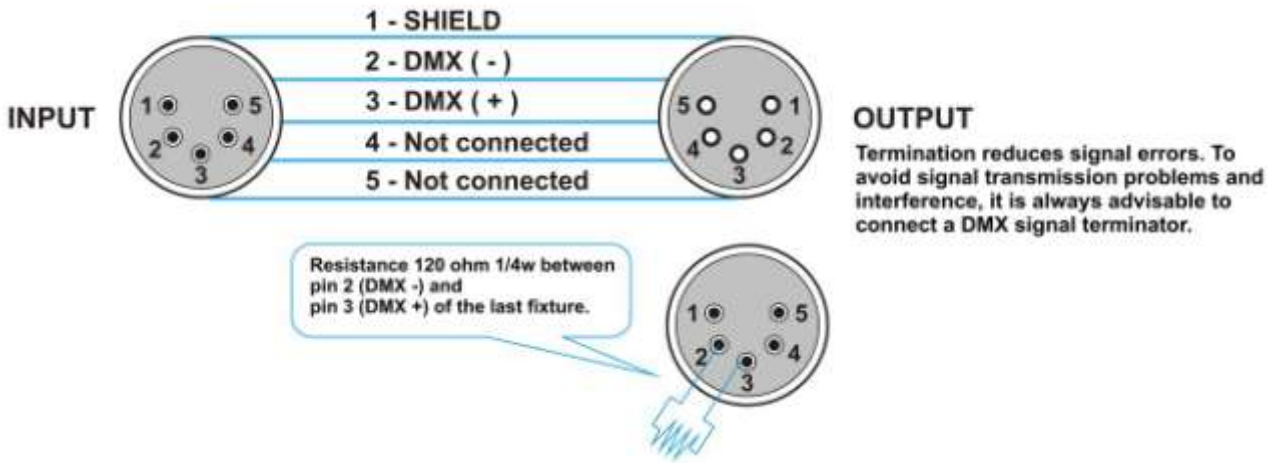
DMX DATA CABLE

Use a ProPlex® DMX cable or equivalent which meets the specifications for EIA RS-485 applications. Standard microphone cables cannot transmit DMX data reliably over long distances. The data cable must have the following characteristics:

- 2-conductor twisted pair plus a shield
- Max. capacitance between conductors – 30 pF/ft.
- Max. capacitance between conductor and shield – 55 pF/ft.
- Max. resistance of 20 ohms / 1000 ft.
- Nominal impedance 100-140 ohms

Cabling must have a male XLR connector on one end and a female XLR connector on the other end.

DMX CONNECTOR CONFIGURATION FOR MOZART 10-WAY PSU

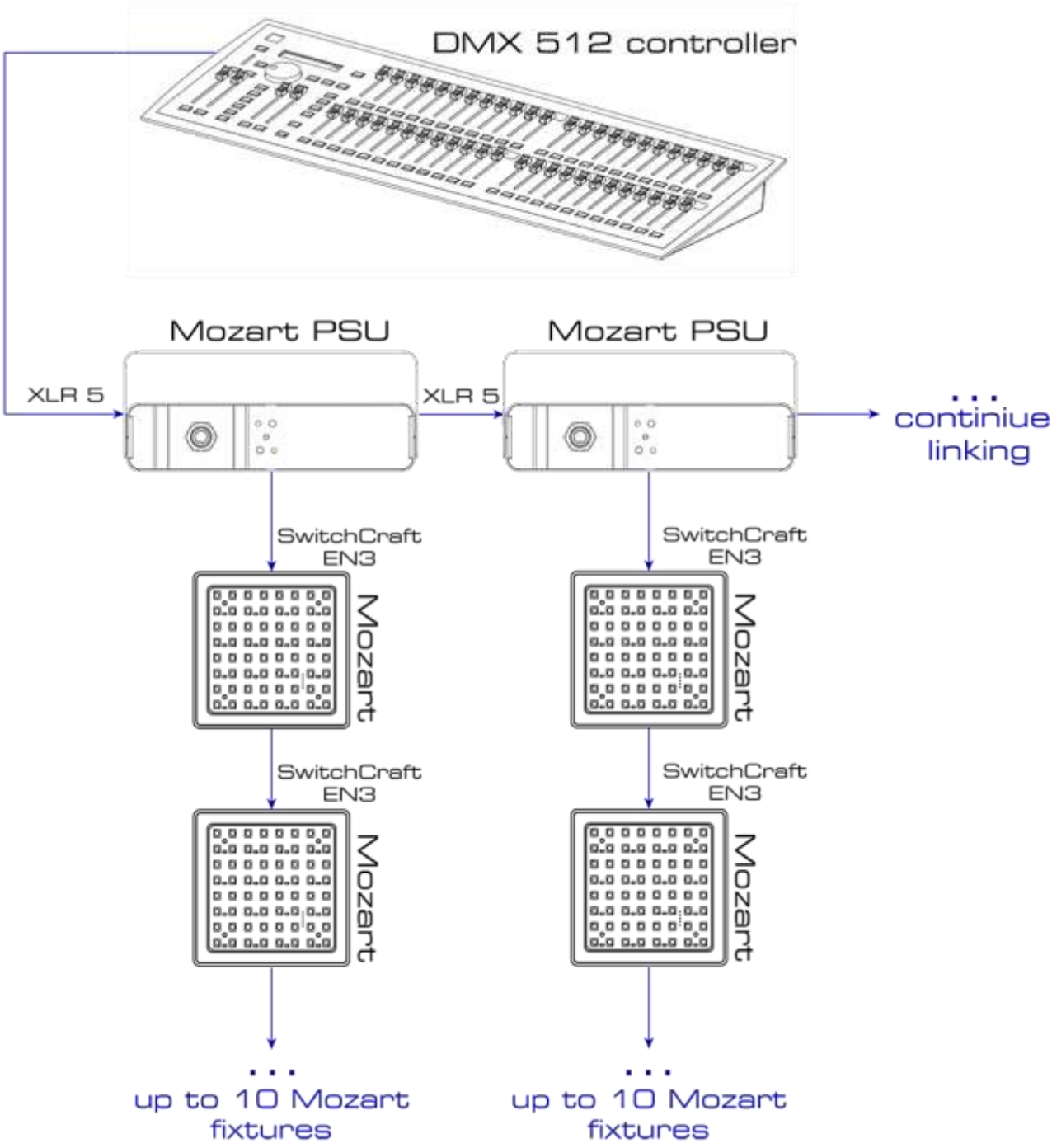

1 - SHIELD
2 - DMX (-)
3 - DMX (+)
4 - Not connected
5 - Not connected
INPUT
OUTPUT
Termination reduces signal errors. To avoid signal transmission problems and interference, it is always advisable to connect a DMX signal terminator.
Resistance 120 ohm 1/4w between pin 2 (DMX -) and pin 3 (DMX +) of the last fixture.

Do not allow contact between the common and the fixture's chassis ground. Grounding the common can cause a ground loop, and your fixture may perform erratically. Test cables with an ohm meter to verify correct polarity and to make sure the pins are not grounded or shorted to the shield or each other.

SETTING UP A DMX SERIAL LINK

1. Connect the (male) 5-pin connector side of the DMX cable to the output (female) 5-pin connector of the DMX console.
2. Connect the opposite end of the cable (female) to the input connector of the Mozart PSU consisting of a (male) 5-pin connector.
3. Proceed to connect from the PSU output as stated above to the input of the following PSU and so on.
4. Continue linking until the last fixture is conected in your DMX chain.

FIXTURE LINKING



3. Operating instructions

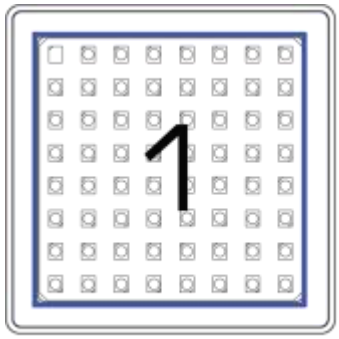
PIXEL MAP

Mozart consists out of **64 RGB 1 chip engines** which are located in **8 rows** and **8 columns**.

There are 3 control modes for Solaris Mozart fixtures:
1) As **1** pixel unit (**3** channel mode)
2) As **4** pixel unit (**12** channel mode)
3) As **16** pixel unit (**48** channel mode)

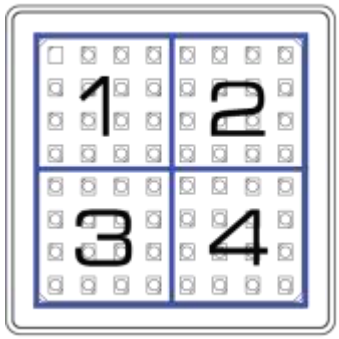
You can only change these modes using the RDM protocol and an RDM enabled controller.

- **RDM Mode 1**



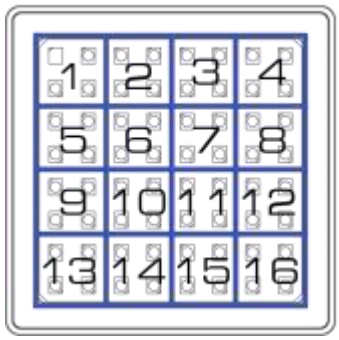
1 pixel (3Ch)

- **RDM Mode 2**



4 pixel (12Ch)

- **RDM Mode 3**



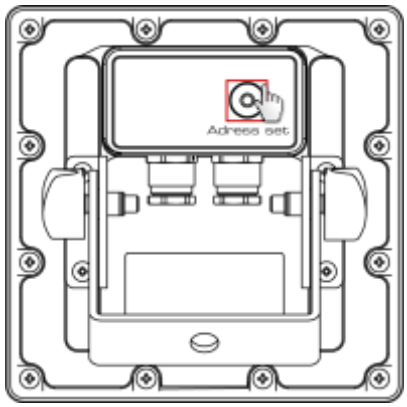
16 pixel (48Ch)

INTERNAL ADDRESS SET

The Mozart 10-way power supply must be addressed via RDM.
To **set the address** for Mozart fixtures, first set the starting address for the Mozart 10-way powersupply .

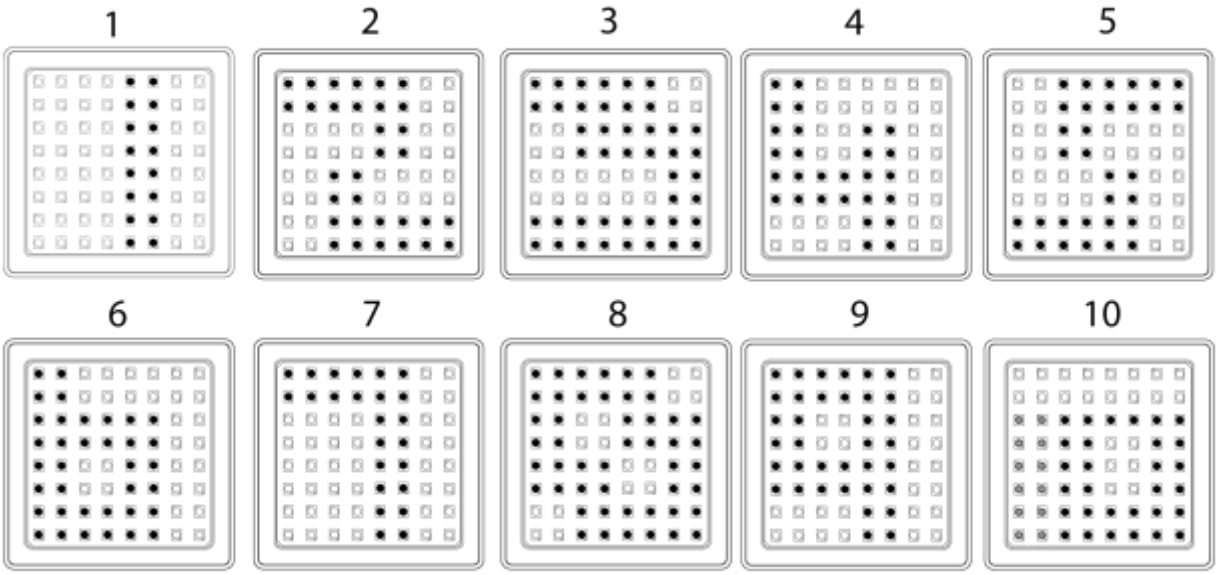
To set the fixture address of Mozart fixtures (1-10), follow these steps:

Press and hold **<Address set>** button located at the back of the Mozart.



The current internal addressing number will appear (1-10).
To **change** this number, press **<Address set>** button. The next addressing number will appear. Repeat until the desired fixture number is shown on the tile

Rendering of numbers from 1-10 shown on Mozarts LEDs:



Using a starting address of DMX 1 on the 10-way PSU, this chart is an example of the Mozart fixture addresses.

DMX CH		FIXTURE ID 1 PIX	4 PIX	16 PIX
1	R	1	1	1
2	G			
3	B			
4	R	2		
5	G			
6	B			
7	R	3		
8	G			
9	B			
10	R	4		
11	G			
12	B			
13	R	5	2	
14	G			
15	B			
16	R	6		
17	G			
18	B			
19	R	7		
20	G			
21	B			
22	R	8		
23	G			
24	B			
25	R	9	3	
26	G			
27	B			
28	R	10		
29	G			
30	B			
31	R	1		
32	G			
33	B			
34	R	2		
35	G			
36	B			
37	R	3	4	
38	G			
39	B			
40	R	4		
41	G			
42	B			
43	R	5		
44	G			
45	B			
46	R	6		
47	G			
48	B			

DMX CH		FIXTURE ID 1 PIX	4 PIX	16 PIX
49	R	7	5	2
50	G			
51	B			
52	R	8		
53	G			
54	B			
55	R	9		
56	G			
57	B			
58	R	10		
59	G			
60	B			
61	R	1	6	
62	G			
63	B			
64	R	2		
65	G			
66	B			
67	R	3		
68	G			
69	B			
70	R	4		
71	G			
72	B			
73	R	5	7	
74	G			
75	B			
76	R	6		
77	G			
78	B			
79	R	7		
80	G			
81	B			
82	R	8		
83	G			
84	B			
85	R	9	8	
86	G			
87	B			
88	R	10		
89	G			
90	B			
91	R	1		
92	G			
93	B			
94	R	2		
95	G			
96	B			

... continue as necessary

RDM

Using RDM you also have an option to **locate the device**. This will force selected Mozart to strobe its sequence number in white.

SENSORS

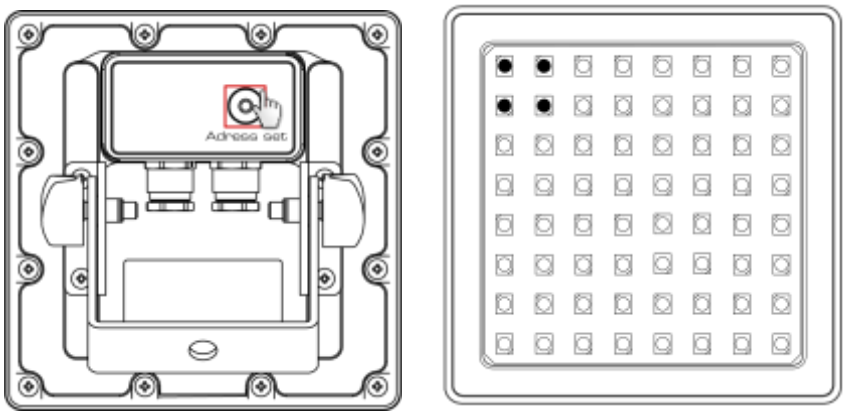
Mozart has 3 sensors:

- Temperature sensor
- Bus current sensor
- Main voltage sensor

Bus current and main voltage values can be seen only using RDM compliant lighting control device (for example, ProPlex® MasterFade).

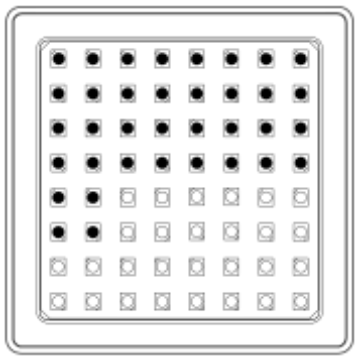
To see current **temperature** of Mozart, press "**Address set**" button located at the back of fixture.

If Mozarts temperature is below or equal 40°C (104°F), one green pixel (4 LEDs) will appear as shown:



Mozart's temperature is indicated by the number of illuminated pixels: i.e., one pixel equals 2.5°C increase. In addition, as Mozart's temperature increases, more red pixels are illuminated. At 60°C (140°F) the fixture is prompted to slowly decrease the LEDs' output intensity to reduce the temperature of fixture.

For example, the diagram below shows the current temperature of a Mozart that is 60°C (40°C base pixel and 8 additional pixels):



4. Appendix

BASICS OF DMX CONTROL

There are 512 channels in a DMX-512 connection. Channels may be assigned in any manner. A fixture capable of receiving DMX-512 will require one or a number of sequential channels. The user must assign a starting address on the fixture that indicates the first channel reserved in the lighting console. There are many different types of DMX controllable fixtures and they all may vary in the total number of channels required. Choosing a start address should be planned in advance. Channels should never overlap. If they do, this will result in erratic operation of the overlapping fixtures. You can however, control multiple fixtures of the same type using the same starting address as long as the intended result is that of unison movement or operation. In other words, the fixtures will be slaved together and all will respond identically.

DMX fixtures are often designed to receive and transmit data through a DMX daisy-chain. A DMX daisy-chain is where the DMX OUT of one fixture connects to the DMX IN of the next fixture. The order in which the fixtures are connected is not important and has no effect on how a lighting console communicates to each fixture. Use an order that provides for the easiest and most direct cabling. Connect fixtures using shielded two conductor twisted pair cable such as ProPlex® DMX with 5-pin XLR male to female connectors. The shield/ground is pin 1, while pin 2 is Data Negative (D-) and pin 3 is Data positive (D+). Pins 4 and 5 are not used according to the DMX-512 standard.

GENERAL MAINTENANCE

To maintain optimum performance and minimize wear fixtures should be cleaned frequently. Usage and environment are contributing factors in determining frequency. As a general rule, fixtures should be cleaned at least twice a month. Dust build up reduces light output performance and can cause overheating. This can lead to reduced lamp life and increased mechanical wear. Be sure to disconnect power to the fixture before conducting maintenance.

Unplug fixture from power. Use a vacuum or air compressor and a soft brush to remove dust collected on external vents and internal components. Clean all glass when the fixture is cold with a mild solution of glass cleaner or Isopropyl Alcohol and a soft lint free cotton cloth or lens tissue. Apply solution to the cloth or tissue and drag dirt and grime to the outside of the lens. Gently polish optical surfaces until they are free of haze and lint.

The cleaning of internal and external optical lenses and/or mirrors must be carried out periodically to optimize light output. Cleaning frequency depends on the environment in which the fixture operates: damp, smoky or particularly dirty surroundings can cause greater accumulation of dirt on the unit's optics. Clean with soft cloth using normal glass cleaning fluid. Always dry the parts carefully. Clean the external optics at least every 20 days. Clean the internal optics at least every 30 to 60 days.

LIMITED WARRANTY

Solaris LED fixtures (the Product) are warranted by TMB against defective materials or workmanship for a period of two (2) years from the date of original sale by TMB.

TMB's warranty shall be restricted to the repair or replacement of any part that proves to be defective and for which a claim is submitted to TMB before the expiration of the applicable warranty periods.

This Limited Warranty is void if the defects of the Product are the result of:

- Opening the casing, repair, or adjustment by anyone other than TMB or persons specifically authorized by TMB
- Accident, physical abuse, mishandling, or misapplication of the product.
- Damage due to lightning, earthquake, flood, terrorism, war, or act of God.

TMB will not assume responsibility for any labor expended, or materials used, to replace and/or repair the Product without TMB's prior written authorization. Any repair of the Product in the field, and any associated labor charges, must be authorized in advance by TMB. Freight costs on warranty repairs are split 50/50: Customer pays to ship defective product to TMB; TMB pays to ship repaired product, ground freight, back to Customer.

This warranty DOES NOT cover consequential damages or costs of any kind.

A Return Merchandise Authorization (RMA) Number must be obtained from TMB prior to return of any defective merchandise for warranty or non-warranty repair. For all repairs please contact TMB Tech Support Repair using the contact information below or email TechSupportRepairNA@tmb.com.

527 Park Ave., San Fernando, CA 91340
Tel: +1 818.899.8818
Fax: +1 818.899.8813
tmb-info@tmb.com
www.tmb.com

RETURN PROCEDURE

Returned merchandise must be sent prepaid and in the original packing, call tags will not be issued. Package must be clearly labeled with a Return Merchandise Authorization Number (RMA #). Products returned without an RMA # will be refused. Please contact TMB and request RMA # prior to shipping the fixture. Be prepared to provide the model number, serial number and a brief description of the cause for the return. Be sure to properly pack fixture, any shipping damage resulting from inadequate packaging is the customer's responsibility. TMB reserves the right to use its own discretion to repair or replace product(s). As a suggestion, proper UPS packing or double-boxing is always a safe method to use.

Note: If you are given an RMA #, please include the following information on a piece of paper inside the box:

1) Your name
2) Your address
3) Your phone number
4) The RMA #
5) A brief description of the symptoms

MOZART FIXTURE – TECHNICAL SPECIFICATION

DIMENSIONS / WEIGHT

Length ..... 4.7 in / 119 mm
Width ..... 1.8 in / 45 mm
Height ..... 4.7 in / 119 mm
Weight ..... 1.25 lb / 565g

POWER

Operating voltage ..... 24V DC
Power consumption ..... 20W @ full load
DMX/ power connectors ..... Amphenol Sensor M12

LIGHT SOURCE

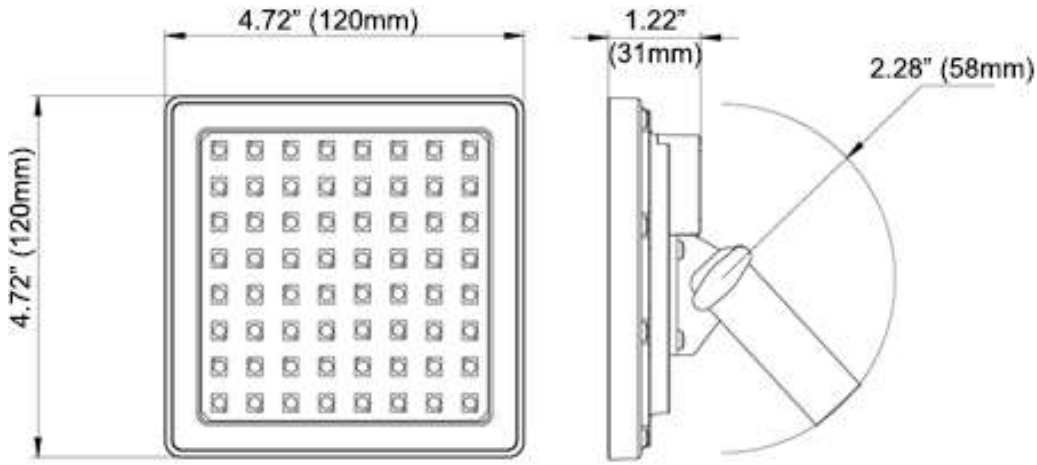
LEDs ..... 64 Cree LMC-E LEDs
Colors ..... RGB
Beam spread ..... 120°
Refresh reate 38,400Hz
Average Color Wavelenght ..... red: 625 nm
green: 530 nm
blue: 460 nm

THERMAL

Max ambient temperature ..... +40°C
Min. ambient temperature ..... -20°C
Cooling ..... Conventional
IP rating ..... IP 65

CONTROL & PROGRAMMING

Control ..... DMX-512A with RDM
Color dimming control ..... 16bi or 8 bitt
Pixel modes 1, 4, 16
DMX Channels ..... 3, 12, 48 (based on selected pixel mode)
Color dimming control ..... 16 bit
DMX/ power connectors ..... Amphenol Sensor M12



MOZART MZ10, 10-WAY PSU – TECHNICAL SPECIFICATION

DIMENSIONS / WEIGHT

Depth ..... 8.75 in / 222 mm
Width..... 7.25 in / 186 mm
Height (with yoke) ..... 3 in / 76 mm
Weight .....5 lb / 2.3 kg

POWER

AC power IN 100-240V
AC power IN connector..... user specified
Power consumption ..... 200W max. (with 10 Mozarts)
DMX/ power OUT connector .....Amphenol Sensor M12
DC power OUT 24V

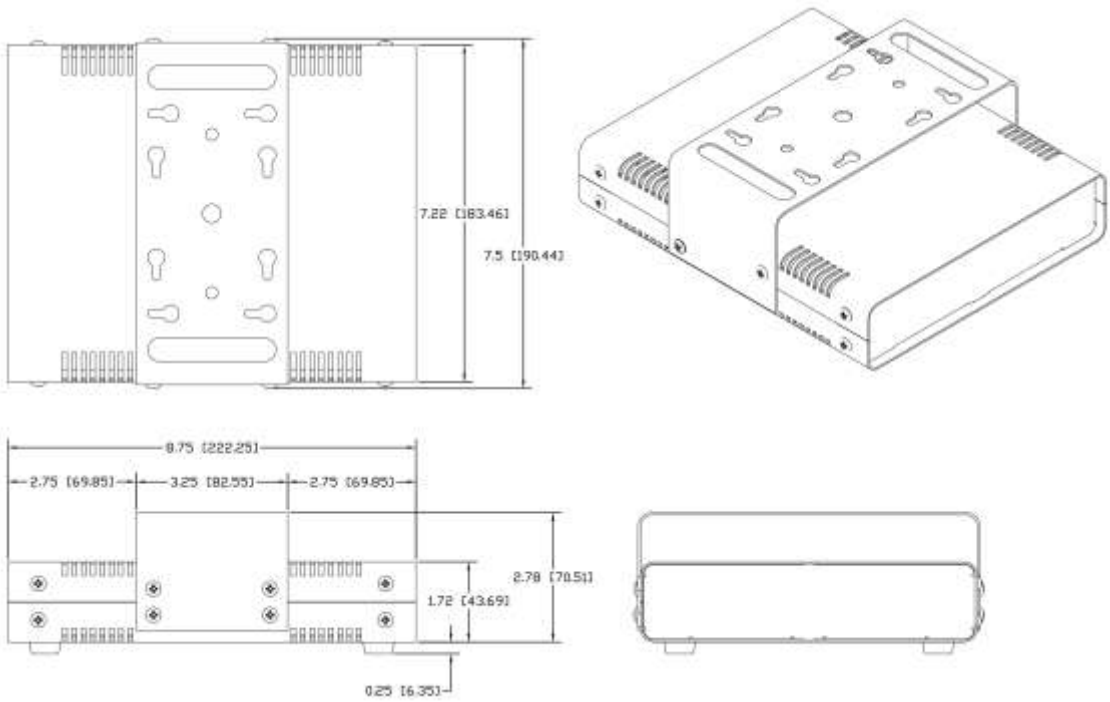
THERMAL

Maximum ambient temperature ..... +40°C
Minimum ambient temperature ..... -20°C
Cooling ..... Conventional
IP rating..... up to IP66

CONTROL & PROGRAMMING

Control ..... DMX-512 with RDM
DMX Channels 3, 12, 48
DMX input ..... locking 5-pin XLR male socket
DMX output for further linking .....locking 5-pin XLR female socket
DMX output for Mozart.....Amphenol Sensor M12
DMX output for Mozart.....10 max.

10-WAY PSU – inches [mm]



CONTACT INFORMATION

GENERAL INFORMATION

TMB

US Phone:	+1 818.899.8818
Fax:	+1 818.899.8813
UK Phone:	+44 (0)20.8574.9700
Fax:	+44 (0)20.8574.9701
e-mail:	tmb-info@tmb.com
web:	www.tmb.com

24/7 TECHNICAL SUPPORT

TMB

US/Canada:	1 877.TMB.DUDE (+1 877.862.3833)
Toll-free UK:	0800.652.5418
International:	+1 818.794.1286
e-mail:	techsupport@tmb.com